

CHAPTER IX MILLING AND PLANING FIXTURES

Milling machines are now used for so many different purposes that the fixtures used for holding parts to be milled differ considerably in form and size, and there are several distinct types. The simplest form of milling fixture is represented by the type which simply holds and locates a single piece for a milling operation. Then there are multiple or gang fixtures for holding a row of duplicate castings or forgings. This type may be intended either for machines having a straight-line feeding movement or a circular motion, as in the case of machines designed for "continuous milling." Other milling fixtures, which often are more complicated in design than the work-holding fixtures, are arranged to hold the work in different positions either for milling surfaces which are at an angle, or for milling at various points around a circular part. The path followed by the milling cutter is also controlled by some fixtures, especially in connection with profile milling; or the fixture may be constructed to give the work a rotary feeding movement as when milling a curved slot or groove on a cylindrical part. Some idea of the variation in different types may be obtained from the designs illustrated in this chapter.

Care should be taken to design milling and other fixtures in such a way that the parts to be machined will be properly located, and so that the operator who uses the tools cannot get the work in wrong and thus spoil the parts. The fixture should be easily loaded and unloaded, and it should be as open as possible, to make cleaning easy and to prevent pockets for chips. Hardened steel seats should be ground parallel with the base after assembling, to obtain the best results. To bring the cost as low as possible, the tool parts should be standardized wherever practicable. The bodies and bases of fixtures should